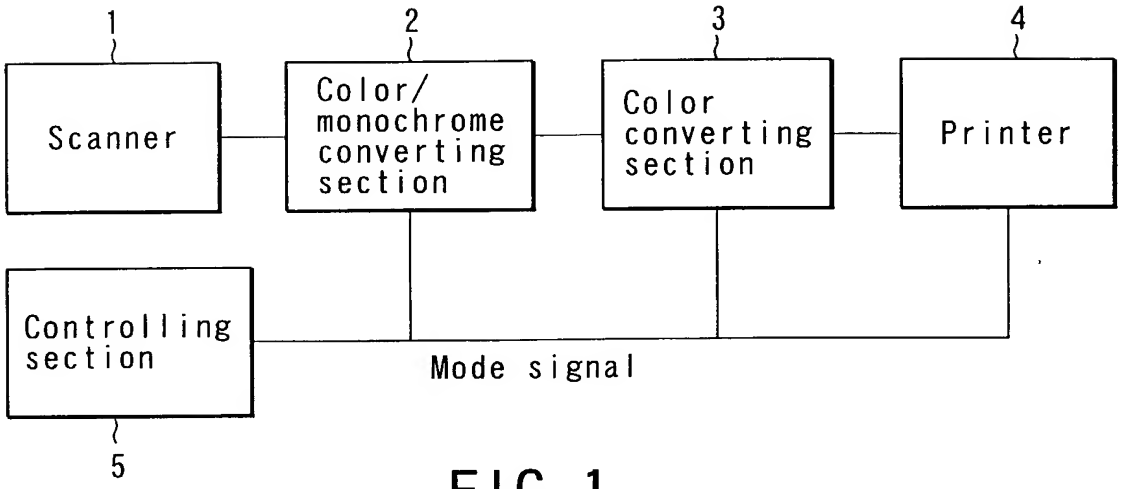

1
2
3
4
Scanner
Color/ monochrome converting section
Color converting section
Printer
Controlling section
Mode signal
5

FIG. 1

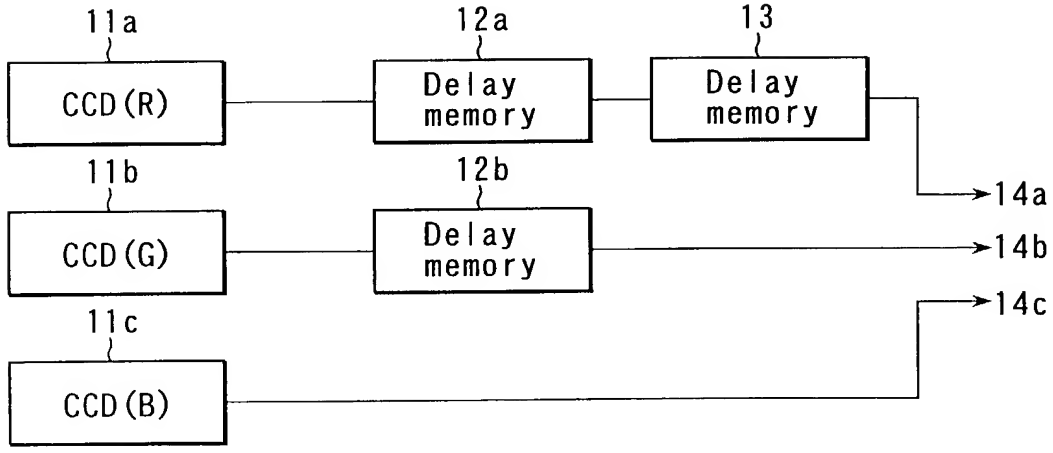

11a
12a
13
CCD(R)
Delay memory
Delay memory
14a
11b
12b
CCD(G)
Delay memory
14b
11c
14c
CCD(B)

FIG. 2

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

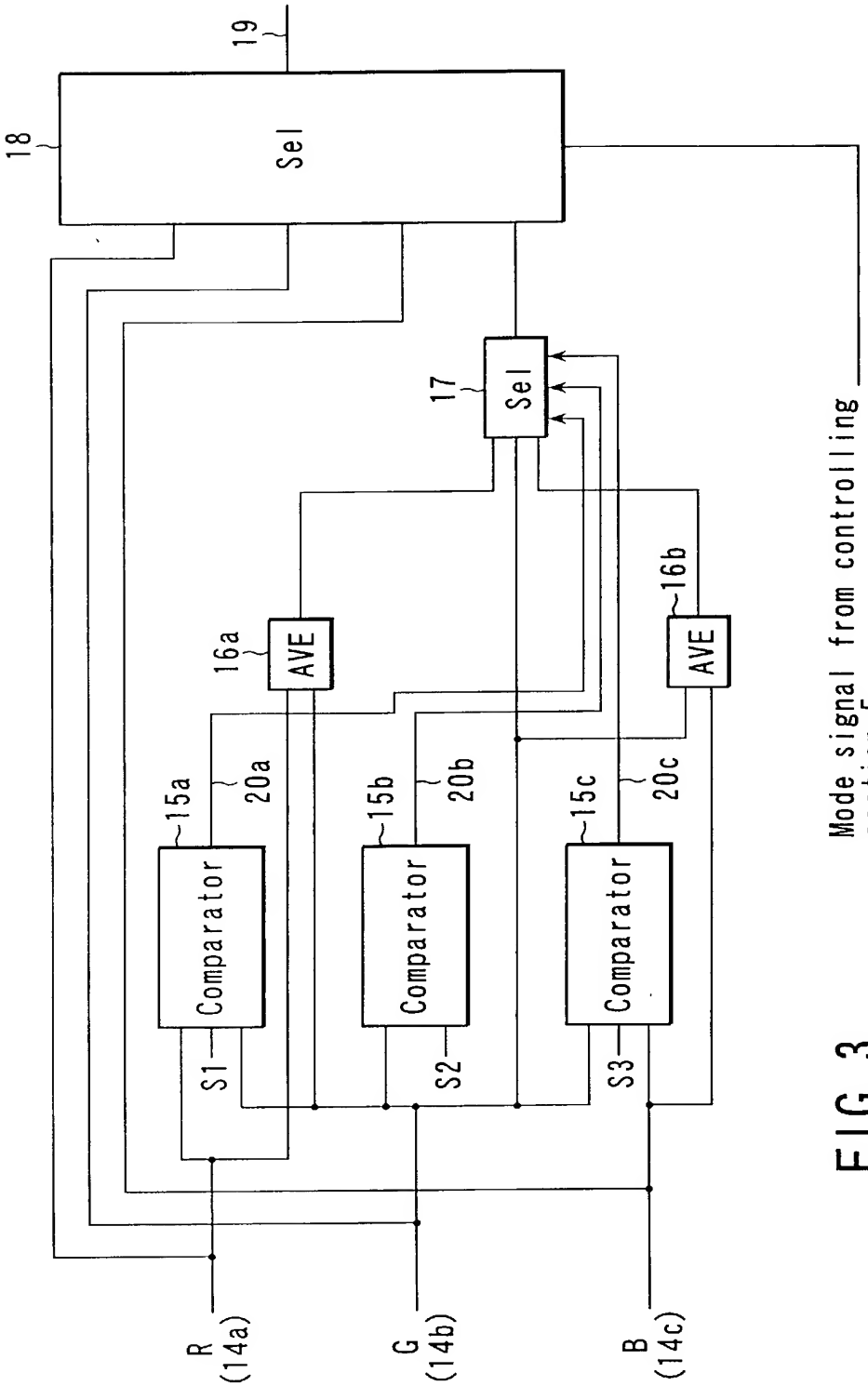


FIG. 3

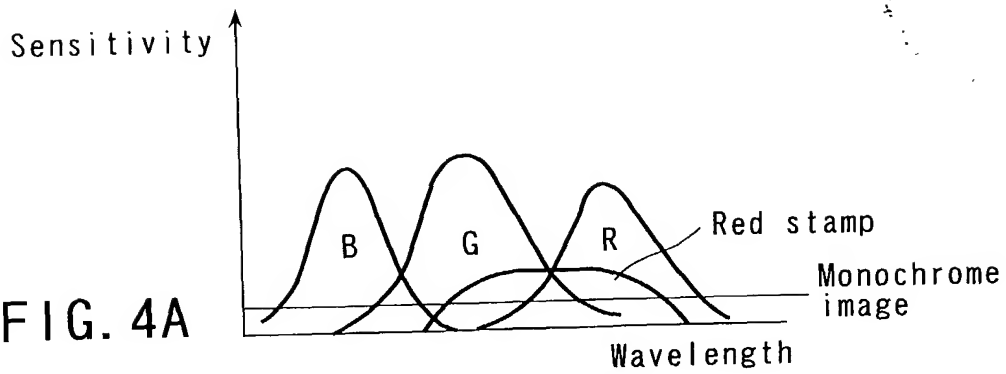


FIG. 4A

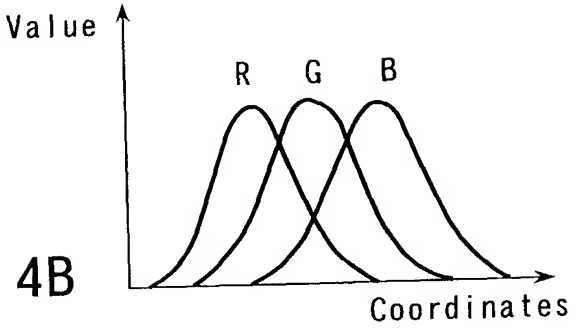


FIG. 4B

Input			Output
20a	20b	20c	
0	0	0	G signal
0	0	1	Average between G and B
0	1	0	G signal
0	1	1	G signal
1	0	0	Average between R and G
1	0	1	Average between R and G
1	1	0	G signal
1	1	1	G signal

FIG. 6

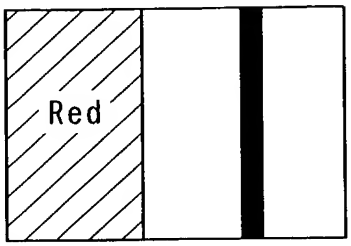


FIG. 5A

Original document

200	200	0	10	240	0
200	200	0	10	240	0
200	200	0	10	240	0

FIG. 5B R

50	50	0	0	250	0
50	50	0	0	250	0
50	50	0	0	250	0

FIG. 5C G

10	10	0	0	240	10
10	10	0	0	240	10
10	10	0	0	240	10

FIG. 5D B

50	50	0	0	250	0
50	50	0	0	250	0
50	50	0	0	250	0

Red is light

FIG. 5E

87	87	0	3	243	3
87	87	0	3	243	3
87	87	0	3	243	3

Red is dark

Character deterioration

FIG. 5F

125	125	0	0	250	0
125	125	0	0	250	0
125	125	0	0	250	0

Red is dark

No character deterioration

FIG. 5G

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

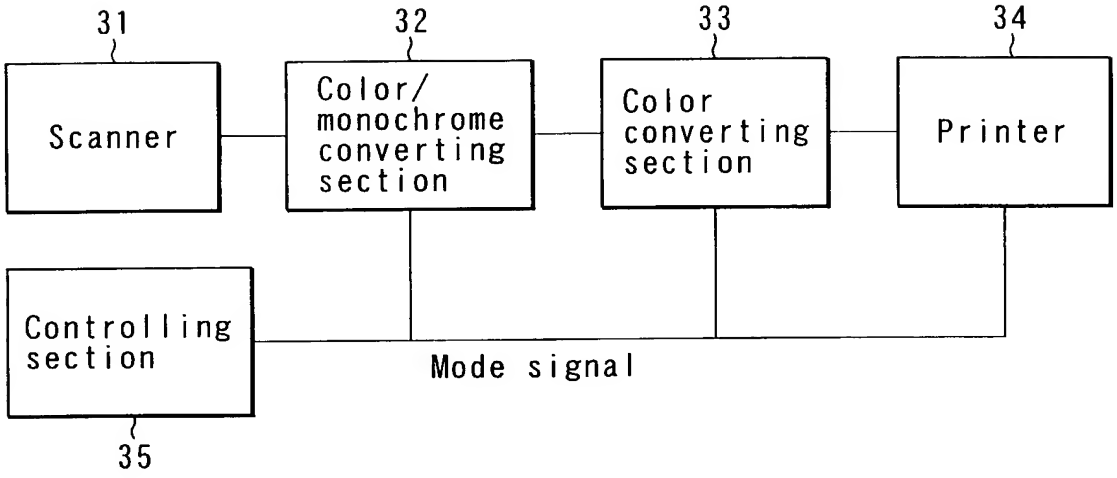


FIG. 7

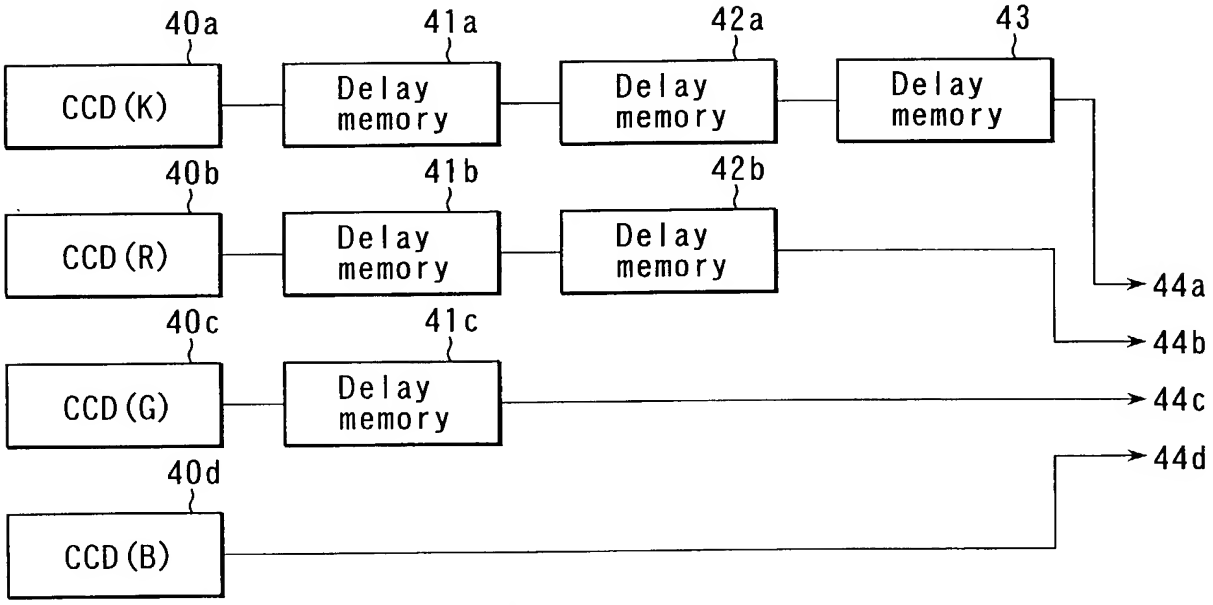


FIG. 8

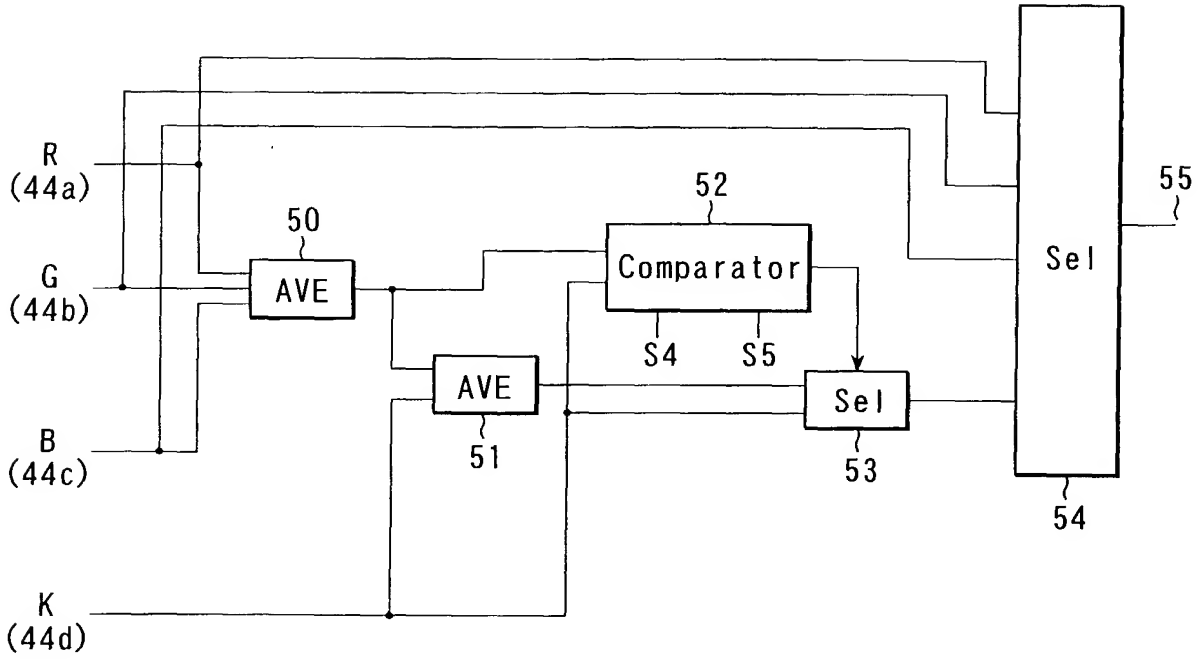

R
(44a)
G
(44b)
B
(44c)
K
(44d)
50
AVE
52
Comparator
S4
S5
AVE
51
Sel
53
Sel
54
55

FIG. 9

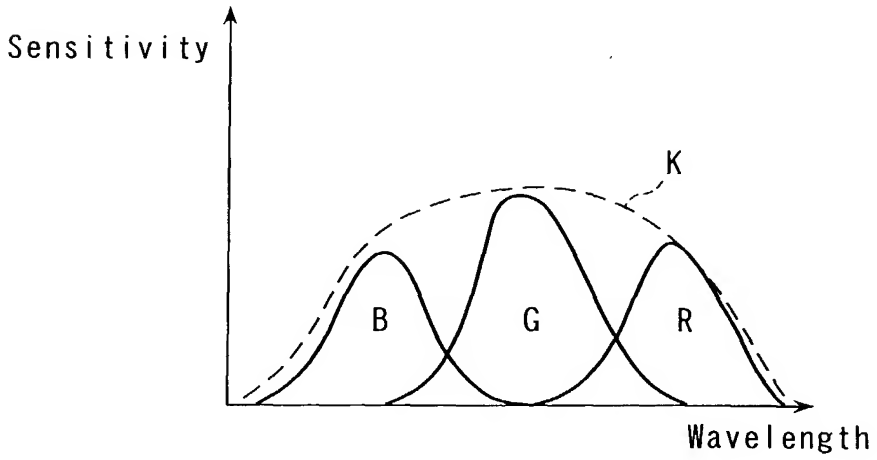

Sensitivity
K
B
G
R
Wavelength

FIG. 10

RGB average	K	Output
RGB average ≦ K	K ≦ S4	K
RGB average > K	K ≦ S4	K
RGB average ≦ K	S4 < K < S5	K
RGB average > K	S4 < K < S5	RGB average
RGB average ≦ K	S5 ≦ K	K
RGB average > K	S5 ≦ K	K

FIG. 11

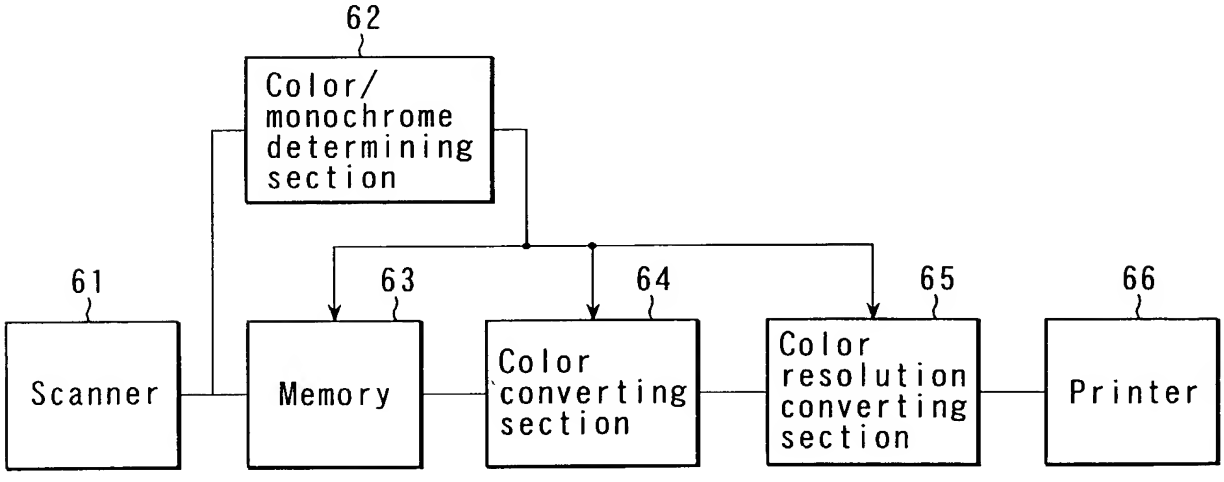
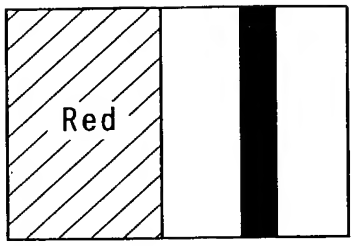


FIG. 13

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

FIG. 12A



Original document

200	200	0	10	240	0
200	200	0	20	240	0
200	200	0	10	240	0

R

FIG. 12B

50	50	0	0	250	0
50	50	0	0	250	0
50	50	0	0	250	0

G

FIG. 12C

10	10	0	0	240	10
10	10	0	0	240	10
10	10	0	0	240	10

B

FIG. 12D

80	60	0	0	250	0
60	60	0	0	250	0
60	60	0	0	250	0

K

FIG. 12E

60	60	0	0	250	0
60	60	0	0	250	0
60	60	0	0	250	0

Red is light

FIG. 12F

87	87	0	0	250	0
87	87	0	0	250	0
87	87	0	0	250	0

Red is dark

FIG. 12G

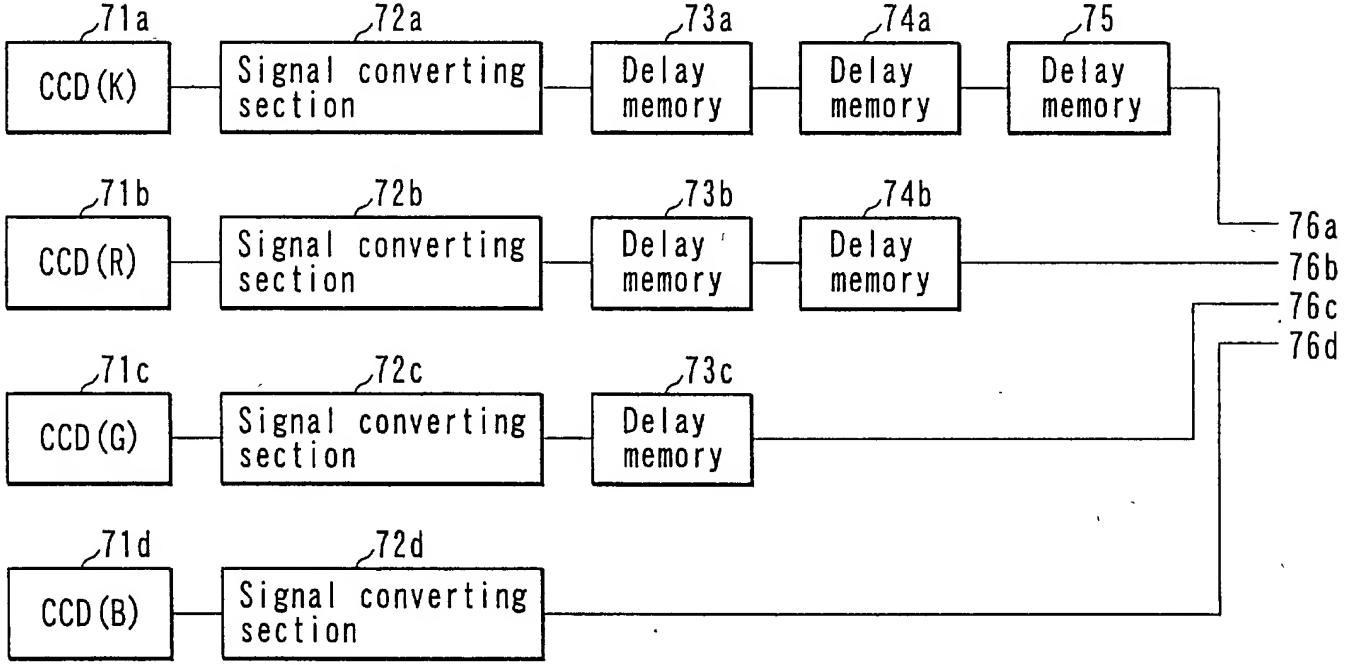


FIG. 14

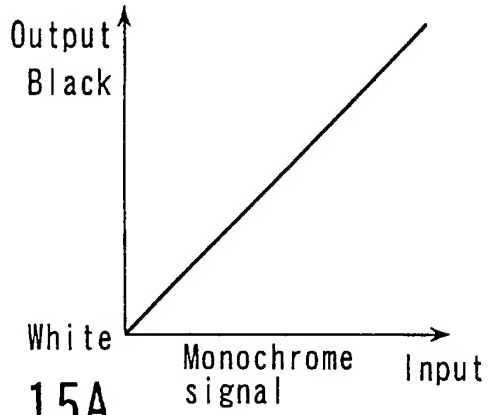


FIG. 15A

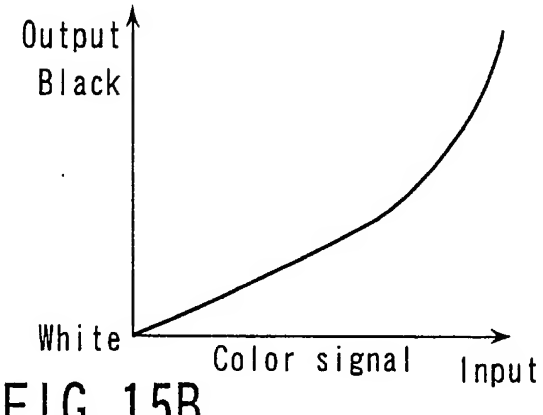


FIG. 15B

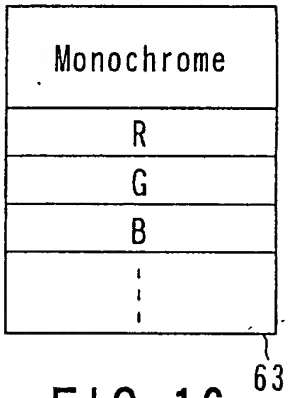


FIG. 16

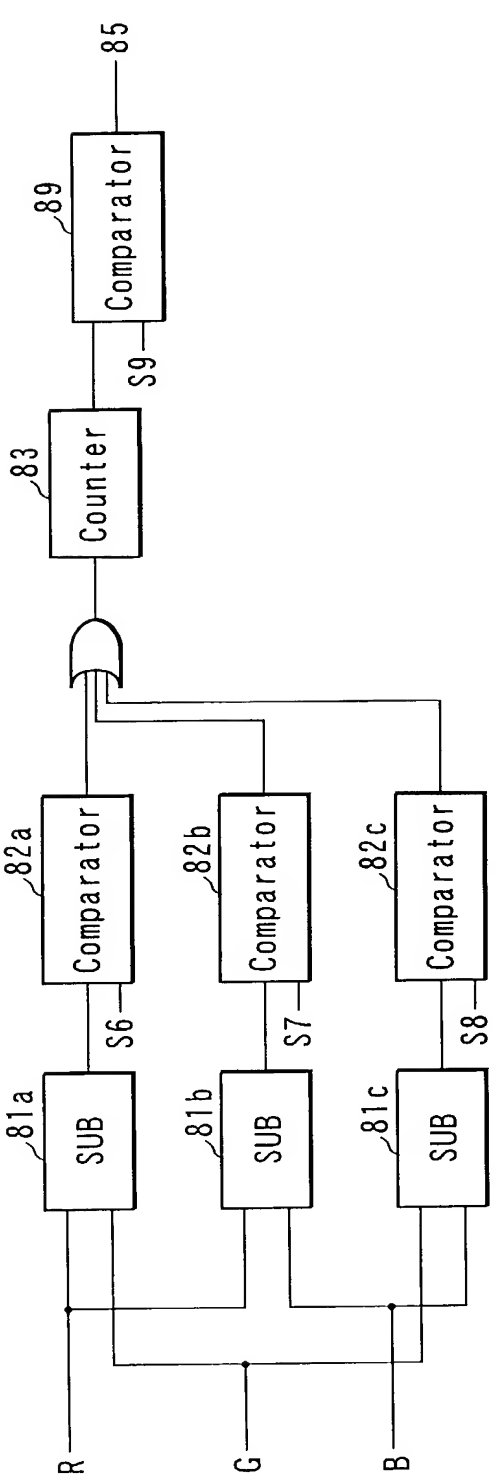

85
89
Comparator
S9
83
Counter
82a
Comparator
82b
Comparator
82c
Comparator
S6
S7
S8
81a
SUB
81b
SUB
81c
SUB
R
G
B

FIG. 17

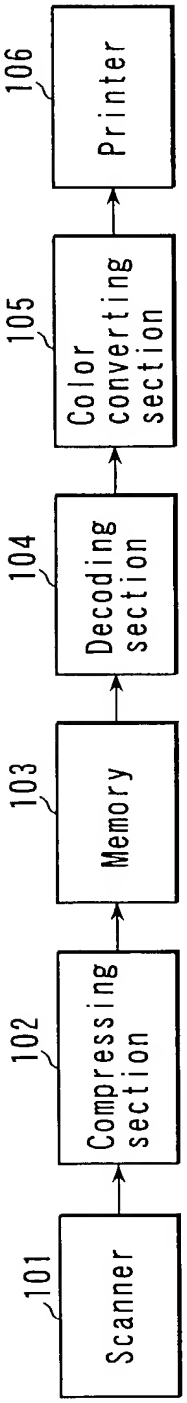

106
Printer
105
Color converting section
104
Decoding section
103
Memory
102
Compressing section
101
Scanner

FIG. 18

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

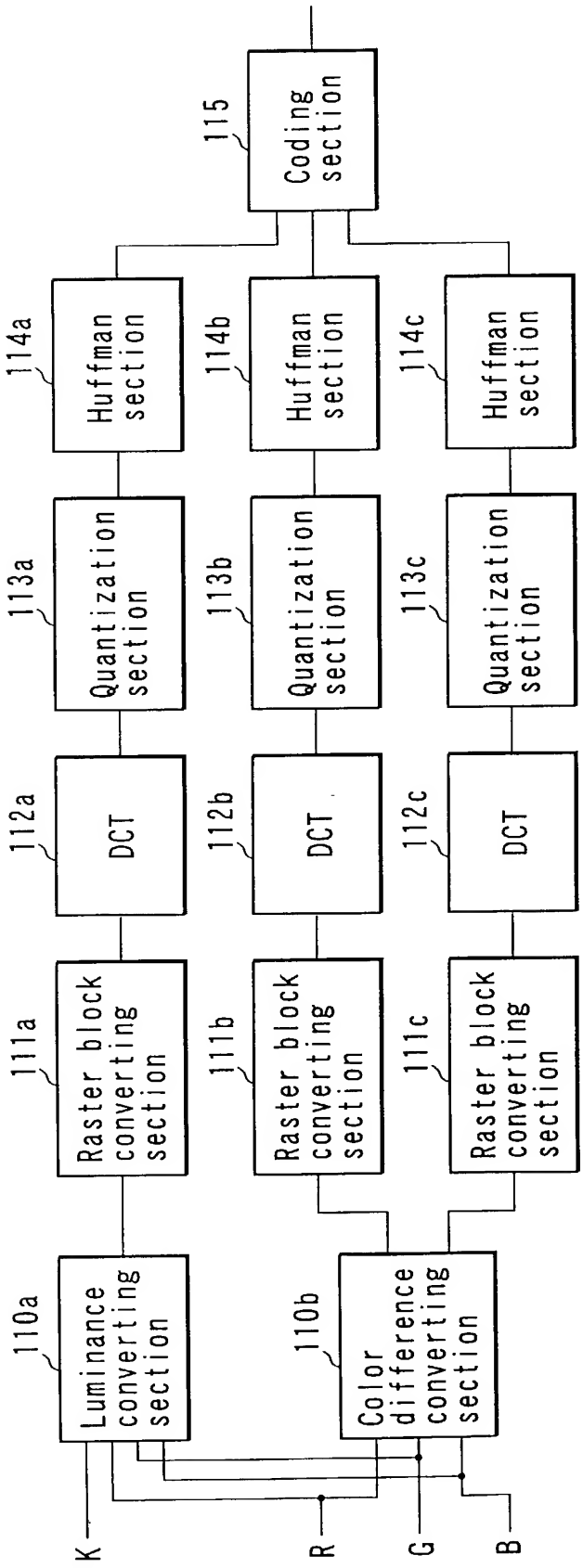


FIG. 19

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

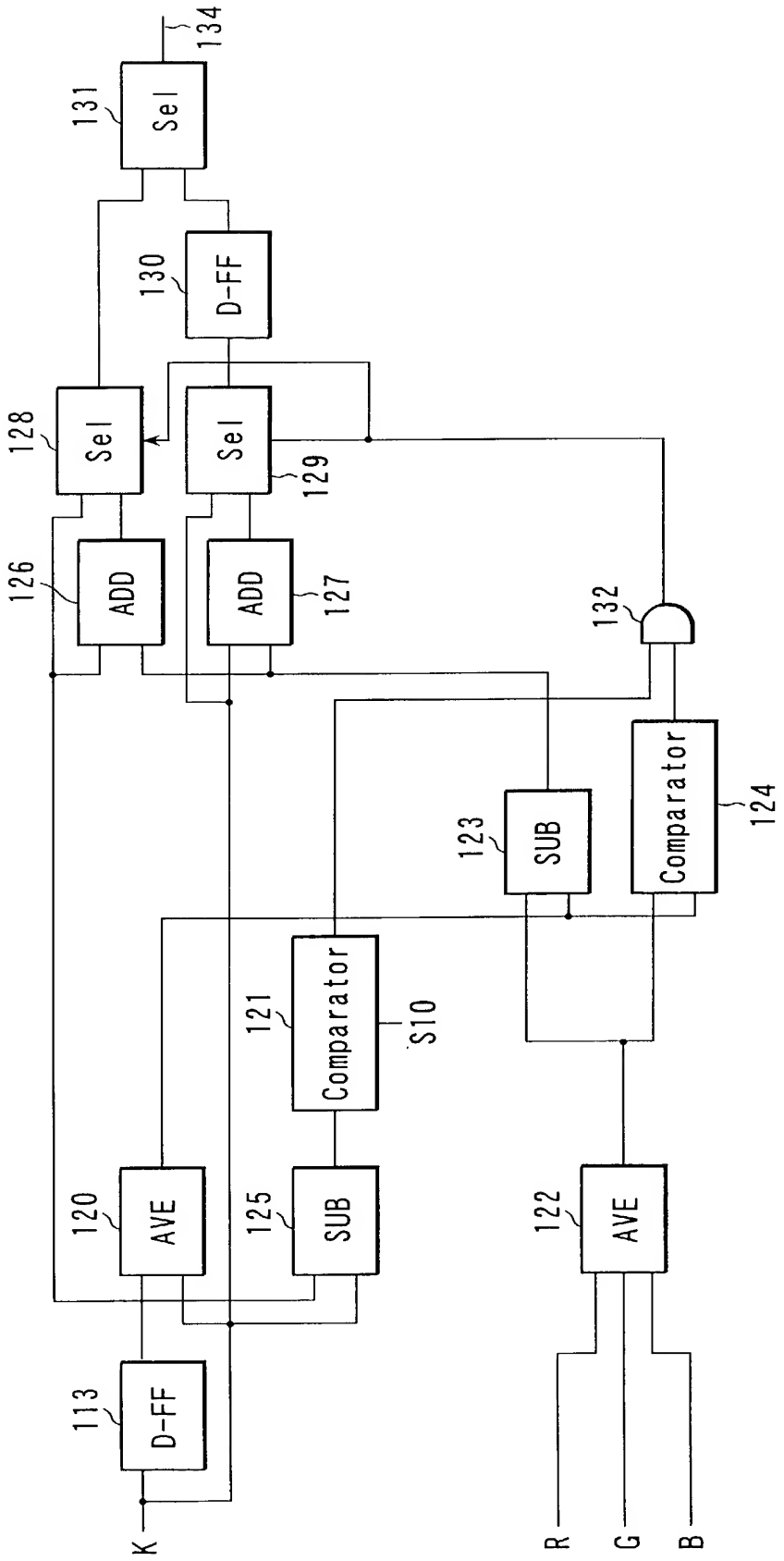
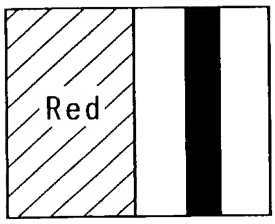


FIG. 20

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990



Original document

FIG. 21A

200	5	120
200	5	120
200	5	120

Monochrome resolution

R

FIG. 21B

50	0	125
50	0	125
50	0	125

G

FIG. 21C

10	0	125
10	0	125
10	0	125

B

FIG. 21D

58	62	0	0	250	0
58	62	0	0	250	0
58	62	0	0	250	0

K

FIG. 21E

78	1	124
78	1	124
78	1	124

RGB average

FIG. 21F

60	0	125
60	0	125
60	0	125

K average

FIG. 21G

18	1	-1
18	1	-1
18	1	-1

RGB average-K average

FIG. 21H

4	0	250
4	0	250
4	0	250

Monochrome difference absolute value

FIG. 21I

76	80	1	1	250	0
76	80	1	1	250	0
76	80	1	1	250	0

(RGB average-K average)+(K1, K2)　(K1, K2)

FIG. 21J

Title: Image Processing Apparatus
And Image Processing Method
Inventor(s): Sunao TABATA et al.
Appl. No.: 10/054,990

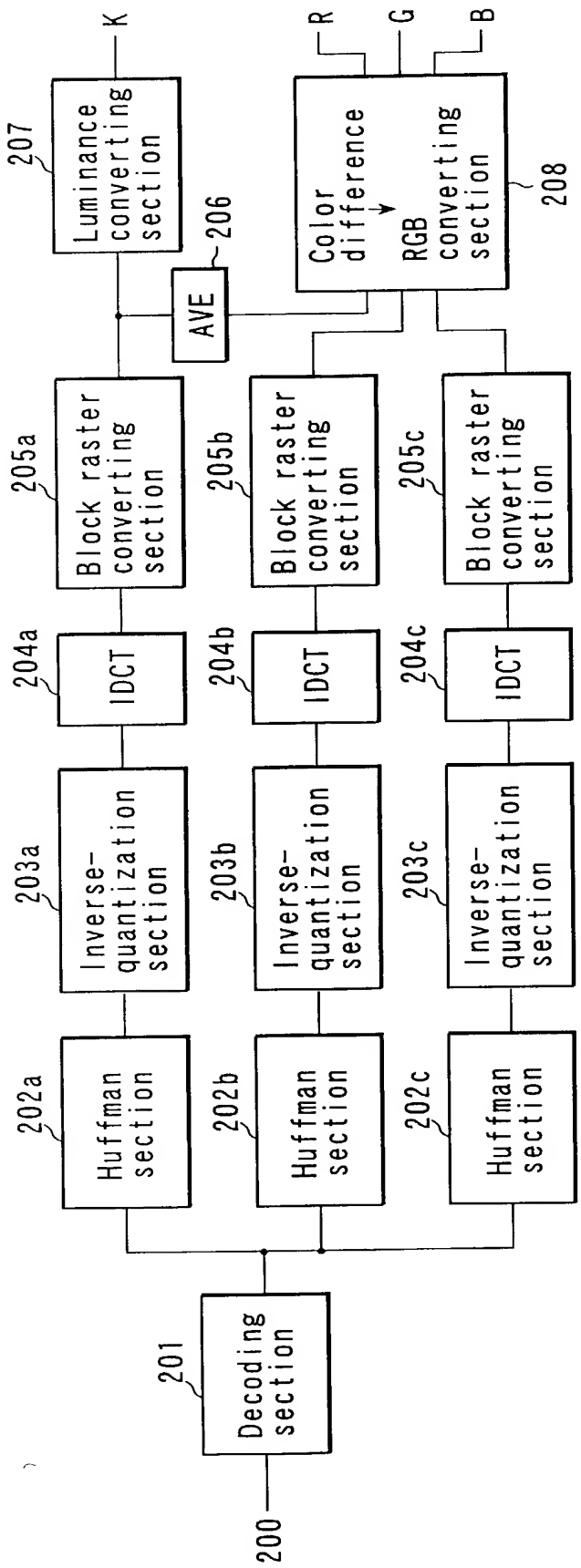


FIG. 22